

ABSTRACT

Coagulated particles of nickel-cobalt-manganese hydroxide wherein primary particles are coagulated to form secondary particles are synthesized by allowing an aqueous solution of a nickel-cobalt-manganese salt, an aqueous solution of an alkali-metal hydroxide, and an ammonium-ion donor to react under specific conditions; and a lithium-nickel-cobalt-manganese-containing composite oxide represented by a general formula, $\text{Li}_p\text{Ni}_x\text{Mn}_{1-x-y}\text{Co}_y\text{O}_{2-q}\text{F}_q$ (where $0.98 \leq p \leq 1.07$, $0.3 \leq x \leq 0.5$, $0.1 \leq y \leq 0.38$, and $0 \leq q \leq 0.05$), which is a positive electrode active material for a lithium secondary cell having a wide usable voltage range, a charge-discharge cycle durability, a high capacity and high safety, is obtained by dry-blending coagulated particles of nickel-cobalt-manganese composite oxyhydroxide formed by making an oxidant to act on the coagulated particles with a lithium salt, and firing the mixture in an oxygen-containing atmosphere.